



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/677,797	10/02/2003	David Alexander Ball	112025-0538	2414
24267 7590 12/19/2007 CESARI AND MCKENNA, LLP 88 BLACK FALCON AVENUE BOSTON, MA 02210			EXAMINER BATES, KEVIN T	
			ART UNIT	PAPER NUMBER
			2153	
			MAIL DATE	DELIVERY MODE
			12/19/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/677,797

Applicant(s)

BALL ET AL.

Examiner

Kevin Bates

Art Unit

2153

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) ☐ Notice of References Cited (PTO-892) | 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) ☐ Notice of Informal Patent Application |
| 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) ☐ Other: _____ |

Response to Amendment

This Office Action is in response to a communication received on November 14, 2007.

Claim 1 has been amended.

Claims 1-21 are pending in this application.

Examiner's Remarks

The examiner wanted to note that in claim 1, it discloses that "each speaker is configured to" and "the protocol RIB configured to." This does not positively recite the limitations of the claim and since it is a device claim, when steps are not positively recited that are considered to only portray an intended use of that device. Since those limitations listed as being configured to perform are intended use that should be given no or limited patentable weight. As long as the device in the prior art is capable of performing those steps then it meets those limitations. In this case the reference, Norman (7054311) seems meet all the positively recited limitations and is capable of performing the intended use of the claim. But in hopes to further prosecution the examiner analyzed those limitations with patentable weight in hopes to speed up prosecution. These limitations will be given full patentable weight if they are amended to be positively recited.

Claim Rejections - 35 USC § 103

Art Unit: 2153

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-9 and 11-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Norman (7054311) in view of Crump (6999454).

Regarding claims 1, 11, and 20, Norman teaches a distributed software architecture system configured to implement a routing protocol in a router of a computer network, the system comprising:

a plurality of processors (Column 5, lines 23 – 27);
a switch fabric interconnecting the processors (Column 6, lines 19 – 26); and
a plurality of processes each running on a different one of the processors (Column 7, lines 19 – 41; Column 5, lines 23 – 27, where each router has multiple controller cards and those controller cards are the multiple processors running a process with performs the steps), the processes including two or more speakers and a protocol routing information base (RIB) (Column 9, lines 24 – 39), each speaker configured to (i) handle one or more connections to peer routers of the router (Column 7, lines 31 – 41), (ii) receive and store routes from those peer routers (Column 7, lines 31 – 41), and (iv) download all routes received from the peer routers (Column 8, lines 37 – 49).

Norman does not explicitly indicate apply inbound policy to the routes received from the peer routers, filtering using the inbound policy, to the protocol RIB, the protocol

Art Unit: 2153

RIB configured to perform a first stage of route selection to compute a set of best routes from among the routes downloaded from all of the speakers of the router.

Crump teaches a distributed router, including a switch fabric, that shares RIB information with its neighbors (Column 5, lines 54 – 63; Column 3, lines 56 – 64) which includes

Filtering routes (Column 11, lines 5 – 9) and computing a set of best routes among the routes downloaded from the speakers of the router (Column 7, line 61 – Column 8, line 4; Column 9, lines 12 – 18; lines 29 – 35; lines 56 – 60).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Crump's teaching of computing the best routes for the routing table in Norman's system in order to improve router performance by quickly reducing the number of routes that need to be considered and re-communicated over the network to just the best and backup routers.

Regarding claim 18, Norman teaches an apparatus adapted to implement a Border Gateway Protocol (BGP) routing protocol in a router of a computer network (Column 6, lines 54 – 59) as a distributed software architecture system (Column 5, lines 23 – 27), the apparatus comprising:

means for running a BGP speaker on a first processor of a plurality of interconnected processors (Column 9, lines 24 – 39), the BGP speaker including:

means for handling one or more connections to peers of the router (Column 7, lines 31 – 41),

Art Unit: 2153

means for receiving and storing routes from those peers (Column 7, lines 31 – 41), and

means for downloading all routes received from the peers (Column 8, lines 37 – 49).

Norman does not explicitly indicate apply inbound policy to the routes received from the peer routers, filtering using the inbound policy, to the protocol RIB, the protocol RIB configured to perform a first stage of route selection to compute a set of best routes from among the routes downloaded from all of the speakers of the router.

Crump teaches a distributed router, including a switch fabric, that shares RIB information with its neighbors (Column 5, lines 54 – 63; Column 3, lines 56 – 64) which includes

Filtering routes (Column 11, lines 5 – 9) and computing a set of best routes among the routes downloaded from the speakers of the router (Column 7, line 61 – Column 8, line 4; Column 9, lines 12 – 18; lines 29 – 35; lines 56 – 60).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Crump's teaching of computing the best routes for the routing table in Norman's system in order to improve router performance by quickly reducing the number of routes that need to be considered and re-communicated over the network to just the best and backup routers.

Regarding claims 2, 12, 19, and 21, Norman teaches the system of claims 1, 11, 18, and 20.

Norman does not explicitly indicate a local RIB (loc-RIB) maintained by the protocol RIB and configured to store the set of best routes computed by the protocol RIB.

Crump teaches a local RIB (loc-RIB) maintained by the protocol RIB and configured to store the set of best routes computed by the protocol RIB (Column 7, line 61 – Column 8, line 4; Column 9, lines 12 – 18).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Crump's teaching of computing the best routes for the routing table in Norman's system in order to improve router performance by quickly reducing the number of routes that need to be considered and re-communicated over the network to just the best and backup routers.

Regarding claims 3 and 13, Norman teaches the system of claims 2 and 12.

Norman does not explicitly indicate wherein the processes further include a global RIB configured to maintain a routing table for the router.

Crump teaches a global RIB configured to maintain a routing table for the router (Column 9, lines 49 – 60; Column 9, line 64 – Column 10, line 4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Crump's teaching of computing the best routes for the routing table in Norman's system in order to improve router performance by quickly reducing the number of routes that need to be considered and re-communicated over the network to just the best and backup routers.

Regarding claims 4 and 15, Norman teaches the system of claims 3 and 13.

Norman does not explicitly indicate wherein the protocol RIB is configured to download the set of best routes from the loc-RIB to the global RIB, the global RIB further configured to use the downloaded set of best routes from the loc-RIB, along with other sets of best routes downloaded from other routing protocols, to perform a second stage of route selection s that computes optimal routes for installation in the routing table.

Crump teaches the protocol RIB is configured to download the set of best routes from the loc-RIB to the global RIB, the global RIB further configured to use the downloaded set of best routes from the loc-RIB, along with other sets of best routes downloaded from other routing protocols, to perform a second stage of route selection s that computes optimal routes for installation in the routing table (Column 7, line 61 – Column 8, line 4; Column 9, lines 12 – 18; lines 29 – 35; lines 56 – 60, wherein Crump uses both the local routes and the remote routes to determine both the best routes and the non-best routes for each, creating the optimal routes by using the best routes found and advertising them).

Regarding claims 5 and 16, Norman teaches the system of claims 4 and 15 further comprising one or more line cards connected to the switch fabric, each line card configured to render forwarding decisions on packets received at the router (Column 5, line 57 – Column 6, line 4) using a forwarding information base (FIB) constructed from the optimal routes installed in the routing table (Column 6, lines 42 – 53; Column 7, lines 5 – 7).

Regarding claim 6, Norman teaches the system of claim 2 wherein the bRIB is further configured to upload the set of best routes to the speakers to allow the speakers to advertise the best routes to the peer routers (Column 7, lines 8 – 10; Column 6, lines 54 – 56).

Regarding claim 7, Norman teaches the system of claim 6 wherein each speaker is further configured to apply outbound policy to the best routes prior to advertising them to the peer routers (Column 7, lines 8 – 10; Column 9, lines 24 – 29).

Regarding claim 8, Norman teaches the system of claim 7 wherein each speaker is further configured to advertise the best routes using update messages (Column 13, lines 23 – 43).

Regarding claim 9, Norman teaches the system of claim 8 wherein the routing protocol is a Border Gateway Protocol (BGP) and wherein the protocol RIB is a BGP RIB (bRIB) (Column 6, lines 54 – 59).

Regarding claim 14, Norman teaches the method of claim 13 wherein the second and third processors are the same processor (Column 7, lines 19 – 30)

Regarding claim 17, Norman teaches the method of claim 12 further comprising the steps of: uploading the best routes from the bRIB to each speaker (Column 7, lines 8 – 10; Column 6, lines 54 – 56); applying outbound policy to the uploaded best routes (Column 7, lines 8 – 10; Column 9, lines 24 – 29); and advertising resulting best routes to the peers (Column 13, lines 23 – 43).

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Norman in view of Crump, and further in view of Weyman (2005/0041665).

Regarding claim 10, Norman teaches the system of claim 1 and that the invention is equally applicable to other routing protocols (Column 6, lines 55 – 56).

The combined teaching of Norman and Crump does not explicitly indicate wherein the routing protocol is a distance vector routing protocol.

Weyman teaches a system of dealing with RIB protocol messages that includes using the routing protocol of distance vector routing protocol (Paragraph 81 and 150).

It would have been obvious to one of ordinary skill in the art at the time this invention that one could have tried using distance vector routing protocol instead of BGP in Norman's system in order for the benefits of Norman's system to operate in a network operating the distance vector routing protocol.

Response to Arguments

Applicant's arguments filed November 14, 2007 have been fully considered but they are not persuasive.

The applicant argues that Norman does not disclose processes running on different processors including two or more speakers and a routing protocol RIB. The examiner disagrees, in Column 7, lines 31 – 41, the controller card contains a processor that includes speakers for communicating peer routes. In Column 5, lines 23 – 27, Norman teaches that each router in the system comprises multiple controller cards. It is

Art Unit: 2153

clear from these disclosures that each router has multiple controller cards that each has its own processor. Those processors are each running processes that handle the connections to the routers and sharing route information. Because there are more than one controller card and each controller card contains a speaker, then there are two or more speakers in Norman's system. Also as seen in Column 9, lines 22 – 41, each router in the system uses the RIB protocol to determine routing information in the network.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Bates whose telephone number is (571) 272-3980. The examiner can normally be reached on 9 am - 5 pm.

Art Unit: 2153

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glen Burgess can be reached on (571) 272-3949. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KL T BT

Kevin Bates
November 26, 2007


GLENON B. BURGESS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100